REMARKS

Claims 1, 2, and 4 to 30, are pending in this application; of which, claims 1, 7, 14, 17 and 21 are the independent claims. Claim 3 is cancelled without prejudice. Favorable reconsideration and further examination are respectfully requested.

Applicants acknowledge the Examiner's indication that claims 21 to 29 are allowed. Applicants also acknowledge the Examiner's indication that claims 17 to 20 would be allowable if the 35 U.S.C. §112, second paragraph, rejections were overcome. Applicants believe they have overcome the §112 rejections based on at least the argument presented below.

Initially, Applicants thank the Examiner for conducting an interview on September 6, 2006. Applicants discussed the foregoing amended claims and the arguments presented herein, but no agreement was reached between the Examiner and the Applicants on the claims because the Examiner needed more time to review the prior art. The Examiner indicated that if she did not agree with this Amendment that the Examiner would call Applicants' representative to discuss.

Turning to the claim objection, the Examiner suggested amending claim 1 to replace the term "polynomial" to "residue" in claim 5. Applicants have amended claim 1 to include the term "residue." Applicants respectfully request withdrawal of the claim objection.

The Examiner rejected claims 1 to 6 and 17 to 20 under 35 U.S.C. §112, second paragraph because the term "adapted to" is indefinite. Applicants respectfully disagree.

The term "adapted to" is acceptable claim language. For example, in the MPEP, the term is as acceptable as "wherein." In particular, MPEP 2111.04 recites

> Claim scope is not limited by claim language that suggests or makes optional but does not require steps to be performed, or by claim language that does not limit a claim to a particular structure. However, examples of claim language, although not exhaustive, that may raise a question as to the limiting effect of the language in a claim are:
> (A) "adapted to" or "adapted for" clauses;
> (B) "wherein" clauses; and
> (C) "whereby" clauses.

Applicants respectfully request that the § 112 rejections be withdrawn.

Claims 1, 2 and 4 to 6 were rejected under 35 U.S.C. § 102(e) as being anticipated by Yoshida et al. (U.S. Patent Number 6,754,870). Claim 3 was rejected under 35 U.S.C. § 103(a) as being obvious over Yoshida in view of Maa (U.S. Patent Number 5,878,057).

Amended claim 1 is directed to a configurable cyclic redundancy check (CRC) calculation engine. The configurable CRC calculation engine includes a CRC unit, at least one polynomial storage device to provide a polynomial to the CRC unit and at least one residue storage device to provide a residue to the CRC unit. The CRC unit is adapted to determine a CRC value for received data using said polynomial and the residue. The configurable CRC calculation engine further includes an input random access memory (RAM) coupled to the CRC unit and the at least one polynomial storage. The RAM input is configured to provide the polynomial to the at least one polynomial storage.

The applied art is not understood to disclose or to suggest the foregoing features of claim 1. In particular, neither Yoshida nor Maa disclose or suggest that the configurable CRC

calculation engine includes an input RAM coupled to the CRC unit and the at least one polynomial storage and is configured to provide the polynomial to the at least one polynomial storage.

As acknowledged by the Examiner, Yoshida does not disclose or suggest an input RAM (see page 6 of the Office Action). Therefore, Yoshida does not disclose or suggest that the configurable CRC calculation engine includes an input RAM coupled to the CRC unit and the at least one polynomial storage and is configured to provide the polynomial to the at least one polynomial storage.

The Examiner has introduced Maa to overcome the deficiency of Yoshida not disclosing or suggesting an input RAM. The Examiner has indicated that the CRC register 22 is both a polynomial storage device (p-bit portion 22P) and a remainder storage device (k-bit portion 22K) and that the input RAM is the look-up table 10 (see page 5 of the office action and FIG. 2 of Maa).

Applicants respectfully disagree that the CRC register is a polynomial storage device and a remainder storage device. Maa clearly defines a remainder to be $R_g[x^i]$. (see column 3, line 56 of Maa). Maa indicates that the letter, p, and the letter, k, represent integers; for example, look-up table 10 has "p locations of k-bits each, each location containing a remainder value of $R_g[x^i]$, where $k \leq i \leq k+p-1$" (see column 3, lines 53 to 56 of Maa). Furthermore, the CRC register 22 provides control signals, not a residue nor a polynomial, to gates 12 using the p-bit portion 22P to control the flow of remainder polynomials from look-up table 10 into parallel XOR Tree 14 (see column 4, lines 10 to 15 of Maa). Moreover, the k-bit portion 22K receives output data

from the parallel XOR Tree 14 for storage, but provides no data to any external device (see column 4, lines 15 to 18 of Maa). Applicants respectfully point out that there is a dashed partition within the CRC register 22 separating p-bit portion 22P and k-bit portion 22K and only the p-bit portion 22P has an output (see FIG. 2 of Maa).

Even if the CRC register 22 did provide a residue, the LUT 10 provides remainder polynomials to a parallel XOR tree 14, but not to the CRC register 22. Therefore Maa does not disclose or suggest that the configurable CRC calculation engine includes an input RAM coupled to the CRC unit and the at least one polynomial storage, and the input RAM is configured to provide the polynomial to the at least one polynomial storage.

For at least the reasons indicated above, even if Yoshida were combined with Maa, the resulting hypothetical combination would not disclose or suggest that the configurable CRC calculation engine includes an input RAM coupled to the CRC unit and the at least one polynomial storage and is configured to provide the polynomial to the at least one polynomial storage. For at least this reason, Applicants submit that Yoshida and Maa should be withdrawn with respect to claim 1.

Claims 7, 8, 12 and 13 were rejected under 35 U.S.C. § 102(e) as being anticipated by Goyins et al. (U.S. Patent Number 6,938,201). Claims 9 to 11 were rejected under 35 U.S.C. § 103(a) as being obvious over Goyins in view of Maa.

Amended claim 7 is directed to a method of determining a cyclic redundancy check (CRC) value. The method includes receiving a polynomial associated with a packet of data, receiving a residue associated with the packet of data provided by a CRC calculation engine and

receiving a block of data. The block of data includes a portion of the packet. The method also includes determining a CRC value, using the CRC calculation engine, for the block of data using the polynomial and the residue and storing the CRC value.

The applied art is not understood to disclose or to suggest the foregoing features of claim 7. In particular, neither Goyins nor Maa disclose or suggest receiving a residue associated with the packet of data provided by a CRC calculation engine and determining a CRC value, using the CRC calculation engine, for the block of data using the polynomial and the residue.

Goyins describes using a first CRC generator 104 and a second CRC generator 124 (See Fig. 1 of Goyins). The second CRC generator 124 is used as a check to determine if a message block, which includes data from the first generator 104, is corrupt (see column 3, lines 62 to 65). On the other hand, Applicants use a single CRC calculation engine to generate a residue and to calculate the CRC value. Therefore, Goyins does not disclose or suggest receiving a residue associated with the packet of data provide by a CRC calculation engine and determining a CRC value, using the CRC calculation engine, for the block of data using the polynomial and the residue.

Maa discloses a look-up table 10 that provides remainder polynomials through gates 12 to the parallel XOR Tree 14 (See Fig. 2 of Maa). Maa does not disclose receiving a residue from a CRC calculation engine. Therefore, Maa does not disclose or suggest receiving a residue associated with the packet of data provide by a CRC calculation engine and determining a CRC value, using the CRC calculation engine, for the block of data using the polynomial and the residue.

For at least the reasons indicated above, even if Goyins were combined with Maa, the resulting hypothetical combination would not disclose or suggest receiving a residue associated with the packet of data provided by a CRC calculation engine and determining a CRC value, using the CRC calculation engine, for the block of data using the polynomial and the residue. For at least this reason, Applicants submit that Goyins and Maa should be withdrawn with respect to claim 7.

Claims 14 and 16 were rejected under 35 U.S.C. § 102(b) as being anticipated by Maa. Claim 15 was rejected under 35 U.S.C. § 103(a) as being obvious over Maa.

Amended claim 14 is directed to a cyclic redundancy check (CRC) calculation engine. The CRC calculation engine includes an input data storage unit having a plurality of outputs, a polynomial storage device having an output and a plurality of single data bit processors coupled together serially and coupled to a respective one of said input data storage unit plurality of outputs and to said polynomial storage device output. The CRC calculation engine further includes a remainder storage element coupled to a first one of the plurality of single data bit processors and configured to provide a residue to the configured to provide a residue to the first one of the single bit data processors.

The applied art is not understood to disclose or to suggest the foregoing features of claim 14. In particular, Maa does not disclose or suggest that the CRC calculation engine includes a remainder storage element configured to provide a residue to the first one of the single bit data processors.

As discussed above with respect to claim 1, the Examiner has indicated that the remainder storage element is k-bit portion 22K of CRC register 22 (see page 5 of the Office Action.) Based on the foregoing arguments with respect to claim 1, k-bit portion 22K does not provide residue, much less provide a residue to a single bit processor. Therefore, Maa does not disclose or suggest that the CRC calculation engine includes a remainder storage element configured to provide a residue to the first one of the single bit data processors.

For at least the foregoing reasons, Applicants request withdrawal of the art rejections.

Applicants submit that all dependent claims now depend on allowable independent claims.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for withdrawing the prior art cited with regards to any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

Applicants submit that the entire application is now in condition for allowance. Such action is respectfully requested at the Examiner's earliest convenience.

All correspondence should be directed to the address below. Applicants' attorney can be reached by telephone at (781) 401-9988 ext. 23.

No fee is believed to be due for this Response; however, if any fees are due, please apply such fees to Deposit Account No. 50-0845 referencing Attorney Docket: Intel-015PUS.

Respectfully submitted,

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